



STATE OF MICHIGAN

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ALERT

Scalding Injuries Caused By Excessive Hot Water, Food and Hot Beverage Temperatures

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A. Background

In all age groups, tap water scald injuries have been cited as the second most common cause of serious burn injuries. A scald is a burn caused by spills, immersion, splashed or contact with hot water, food and hot beverages or steam.

The elderly are particularly at increased risk because their skin tends to be less sensitive and reaction times are reduced, causing a tendency to not pull away from hot water quickly enough to avoid scalding. Their thinner skin also burns full depth more quickly. A complicating risk is their decreased agility which may cause falls or other injuries while trying to get out of the way of a stream of hot water from a sink, shower or tub.

Although state and federal regulations do not specify temperatures appropriate to the consumption of hot beverages, facilities should be aware of the risk for harm to a resident from contact or consumption of hot beverages.

The chart below shows the estimated time for persons to receive second and third degree burns at various temperatures.

Water Temperature	Time to Receive Second Degree Burn	Time to Receive Third Degree Burn
120 degrees	8 minutes	10 minutes
124 degrees	2 minutes	4 minutes
131 degrees	17 seconds	30 seconds
140 degrees	3 seconds	5 seconds
150 degrees	<1 second	1 second

B. Facility Duty

In nursing homes, there is a risk that residents may be scalded by excessively hot water discharged by plumbing fixtures in lavatories attached to their rooms, common bathing and shower areas, public restrooms, or other fixtures to which access is not strictly controlled. Nursing Home Rule 1317 (9) specifies that "The temperature of hot water at plumbing fixtures used by residents shall be regulated to provide tempered water not less than 105 degrees or more than 120 degrees Fahrenheit." Scalds also commonly occur from hot

food, beverages or steam. The Centers for Medicaid and Medicare Services requirements do not specify acceptable water temperatures but excessively hot water, food and beverages that cause injury to residents would be cited under tag F-323 which requires that the resident environment remain as free of accident hazards as possible for residents and/or F-465 which requires the facility provide a safe environment for residents, staff and the public. The use of F-323 and F-465 will depend on the areas in which the problem exists. A citation of F-324 could be appropriate if supervision was not provided to a resident requiring assistance.

Although not a health facility regulatory requirement, facilities should also protect their staff from excessive hot water temperatures in all areas of the facility in order to prevent employee injuries.

C. Abatement Steps

Facilities should monitor and log water temperatures on a regular basis in all areas accessible to residents as part of routine maintenance procedures. Maintenance staff should use accurate thermometers when making these checks. Additionally, facility staff should immediately report water which seems excessively hot to the appropriate staff for quick correction. Maintenance staff should be knowledgeable about the operation of the facility plumbing systems and how to correct problems. Commercial plumbers should be used for complex systems. There are a variety of commercially available and relatively inexpensive anti-scald devices for use on outlets that shut off water automatically above 120 degrees.

Facilities should monitor hot beverages and food temperatures at the point they are served to residents. All residents should be assessed for their ability to handle and consume containers of hot food and beverages. For residents with difficulties, appropriate supervision and use of assistive devices must be provided for the safety of the residents who are at risk for burns and scalds from direct contact with hot beverages and food.

D. Enforcement

The Bureau of Health Systems will continue to cite state Nursing Home Rule 1317 (9) in all cases where water temperatures exceed 120 degrees at one or more locations usually accessible to residents.

We will cite F-323, F-324 or F-465 as appropriate.

References

1. Text Book of Medical and Surgical Nursing, Brunner and Suddarth, Seventh Edition, 1992, Chapter 52, pp. 1501-1539
2. Nursing Home Rule 1317 (9)
3. Domestic Hot Water Scald Burn Lawsuits: The Who, What When, Why Where, How, a technical paper for the annual ASPE Meeting, Dr. D. Bynum, Jr. and Vernon J. Petri, October, 1998
4. Tap Water Scalding Alert, U.S. Consumer Product Safety Commission, undated